CLAIMS

1. A method for simultaneously exposing an array of test compounds to a detector layer of physiologically viable cells, comprising:

(a) providing an array of test compounds, wherein the test compounds are disposed on a porous membrane, wherein the porous membrane is constructed of a non-absorbent material with pores of regular and defined diameter which traverse the membrane directly from the upper to the lower side;

(b) bringing the array of test compounds in close apposition with the detector layer so that the porous membrane is in contact with a liquid layer surrounding the detector layer thereby allowing diffusion of the test compounds through the porous membrane to the detector layer.

2. A method for simultaneously exposing an array of test compounds to a detector layer of physiologically viable cells, wherein the cells are grown on a porous membrane, wherein the porous membrane is constructed of a non-absorbent material with pores of regular and defined diameter which traverse the membrane directly from the upper to the lower side, comprising:

(a) providing an array of test compounds, wherein the test compounds are disposed on a support;

(b) bringing the array of test compounds in close apposition with the detector layer so that the porous membrane is in contact with the array of test compounds thereby allowing diffusion of the test compounds through the porous membrane to the detector layer of physiologically viable cells.

3. The method according to claim 2, wherein the support is a non-porous substrate.

4. The method according to any of claims 1 or 2, wherein the physiologically viable

cells form a monolayer.

5. The method according to any of claims 1 or 2, wherein the physiologically viable cells are supported by an optically clear substrate.

6. The method according to any of claims 1 or 2, wherein the detector layer is held stationary in the field of view of an optical detector and the array of test compounds is moved into contact with said detector layer during the course of measurement.

7. The method according to any of claims 1 or 2, wherein the array of test compounds is held stationary in the field of view of an optical detector and the detector layer is moved into contact with said array of test compounds during the course of measurement.

8. The method according to any of claims 1 or 2, wherein the array of test compounds is generated on the support by combinatorial chemistry.

9. A method for screening test compounds for bioactivity by simultaneously exposing an array of test compounds to a detector layer of physiologically viable cells, comprising:

(a) providing an array of test compounds, wherein each compound is disposed on a porous membrane, wherein the porous membrane is constructed of a non-absorbent material with pores of regular and defined diameter which traverse the membrane directly from the upper to the lower side;

(b) bringing the array of test compounds in close apposition with the detector layer so that the porous membrane is in contact with a liquid layer surrounding the detector layer thereby allowing diffusion of the test compounds through the porous membrane to the detector layer; and

(c) detecting a response of the detector layer to the test compound.

10. A method for screening test compounds for bioactivity by simultaneously exposing an array of test compounds to a detector layer of physiologically viable cells wherein the cells are grown on the porous membrane, wherein the porous membrane is constructed of a non-absorbent material with pores of regular and defined diameter which traverse the membrane directly from the upper to the lower side, comprising:

(a) providing an array of test compounds;

(b) bringing the array of test compounds in close apposition with the detector layer so that the porous membrane is in contact with the array of test compounds thereby allowing diffusion of the test compounds through the porous membrane to the detector layer; and

(c) detecting a response of the detector layer to the test compound.

11. The method according to any of claims 9 or 10, wherein the response is recorded by a sequence of images.

12. The method according to any of claims 9 or 10, wherein the detected response is a change in a luminescence property of the physiologically viable cells in the detector layer.

13. The method according to any of claims 9 or 10, wherein the detected response is a change in a fluorescence property of the physiologically viable cells in the detector layer.

14. The method according to claim 10, wherein the support is a non-porous substrate.

15. The method according to any of claims 9 or 10, wherein the physiologically viable cells form a monolayer.

16. The method according to any of claims 9 or 10, wherein the physiologically

viable cells are supported by an optically clear substrate.

17. The method according to any of claims 9 or 10, wherein the detector layer is held stationary in the field of view of an optical detector and the array of test compounds is moved into contact with said detector layer during the course of measurement.

18. The method according to any of claims 9 or 10, wherein the array of test compounds is held stationary in the field of view of an optical detector and the detector layer is moved into contact with said array of test compounds during the course of measurement.

19. The method according to any of claims 9 or 10, wherein the array of test compounds is generated on the support by combinatorial chemistry.